Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Journal of the Society of Arts.

FRIDAY, DECEMBER 29, 1854.

VISIT OF ARTIZANS TO PARIS.

The committee charged with this subject met at ten o'clock on Saturday, the 23rd instant; present, Mr. Winkworth, in the chair, Mr. George Clark, of Paris, Mr. S. Redgrave, and Mr. T. Twining, Jun.

The committee, after receiving reports from Mr. Clark and the Secretary, of the progress making in the arrangements for the reception of visitors in Paris, and their conveyance there and back, resolved that it would tend much to facilitate the making definite arrangements if the committee could have information as to the probable number of persons likely to take advantage of them; and the Secretary was directed to address a letter to the Institutions in Union, requesting to be informed whether any clubs of artizans had been or were likely to be formed, either in connection with the Institutions or otherwise, for raising funds to enable them to visit Paris during the Exhibition of 1855, and the probable numbers, as far as could be ascertained at the present time.

IMPROVEMENTS IN STEAM NAVIGATION.

It is now about twenty-five years since the first railway in this kingdom was opened, amidst the rejoicings of thousands of astonished spectators, most of whom had previously no conception of the speed which could be attained by this mode of locomotion. Even George Stephenson himself at one time limited, we believe, the speed to be attained upon railways at some *fourteen* miles an hour. Shortly after the successful trial of that experimental railway, the whole kingdom became agitated with an extraordinary impulsive desire to extend its advantages over its whole surface. That which, shortly before the opening of the Liverpool and Manchester railway, was looked upon with doubt and suspicion by the nation at large, now took firm hold of the public mind. "Confidence," it has been truly observed, "is a plant of slow growth;" and when we look back upon the objections and doubts which were opposed to the first effort of our great railway benefactors, we cannot but experience feelings of reproach and shame at our want of discernment, and at our ignorance in so long withholding our assent to what should have appeared to us plain and undeniable. It may be that the public judgment was not left free to exercise an unbiased opinion upon the question, for the private interests of a large and influential class of people were most strongly opposed to the introduction of the railway system throughout the kingdom. First, we had all those interested in the mail coaches, which everywhere traversed the country, opposed to railways; secondly, a numerous class of landed proprietors, who would not listen to any proposition to have their estates crossed by unsightly rails, and their ears assailed by steam-whistles and the rattle of railway carriages. Every conceivable argument that these persons and their numerous friends could urge against the introduction of the railway system, was advanced with all the bitterness and tenacity of a death-struggle; and so the public mind was poisoned to a great extent against what is now admitted to be the greatest benefit to the kingdom that can possibly be conceived. Who is there now who could forego the railway and its speed of thirty, forty, and even sixty miles an hour, and return back to the slow coach system of other years. We will venture to say, not one man in the kingdom who is not considered a fit inmate for an asylum of lunatics.

And yet, notwithstanding our great progress upon land, how is it that upon the water England has made such slow advances in the speed of her steamers, and in the accommodation to be found on board of them. Do we not hear now, from interested parties, the same cry against proposed improvements in the speed and accommodation of steamers, that we, in years long gone by, heard against the railway and its advantages. Is not the same feeling of *personal interest* as strongly at work now, to prevent any great and striking improvement in steam-ships, as it was formerly against railways. Surely it is. The writer of this paper has met with such universal opposition from all persons connected—as owners—with steamers, to his improved plan of steam-ship, by which a speed of not less than 21 miles, and probably, 25 miles an hour, or more, can be attained,—that he feels no hesitation in asserting that the feeling of supposed private interest is as strong against any great improvement in the speed of steamers, as it was formerly on the part of interested parties against our railway system. That feeling, with a few noble exceptions, has extended even to steamship-builders, and engineers. The great body of them are content with their present business; and so long as they can satisfy the public that their present models and patterns are good enough, they think they realize larger profits than if they had to adopt new ones. Thus the public interest is sacrificed to that of a few interested parties.

With these few preliminary observations—and which I have conceived abundantly called for from the opposition I have encountered, I now beg leave to state my plan for attaining the extraordinary speed proposed. It is well established, by numerous successful experiments made in the United States and in Canada, that to attain a speed approaching even to *twenty* miles an hour, great length is required in proportion to breadth of beam, in order to obtain fine lines, and to prevent too great an immersion of the vessel in the water by the power necessary to propel the steamer at high speed. The requisites to the attainment of great speed, are, 1st. Fine lines, 2ndly, great power; and 3rdly, light draught of water in proportion to the power employed. That vessels can be propelled through the water at a speed far exceeding that of the fastest steamer in this country, is evident, from the fact, that even sailing clipper-ships have run within 24 hours, upwards of 450 knots, or at the rate of more than 19 knots or 22 miles an hour. In America, river-steamers have frequently been propelled at the rate of 23 miles an hour; and upon Lake Erie,—where steamers are obliged to be very strongly built, and draw from 7 to 9 feet water,—the new steamer, *Queen of the West*, has lately been propelled at the rate of 25 miles an hour. The steamers that have attained this great speed are all propelled by low-pressure or *condensing* engines; and I do not recollect of an instance where any accident has occurred on board of them from carrying too great a pressure of steam. A year or two ago, an accident occurred upon the Hudson river, owing to a defective sheet of boiler plate; but at the time of the accident the pressure of steam was not great. As those steamers are all built of wood, occasional accidents have occurred from fire; but as I propose to build my steamers of iron, with ordinary care no accident can occur from that cause—at least from the boilers.

Great as is the speed that American lake and river steamers have attained, I am quite satisfied that it can be much increased. From the description of engines they use, they are compelled to give their steamers great breadth of beam, to prevent their being *crank*, and this great beam prevents their having such fine lines as they otherwise could have had. I have mentioned this defect to several of their great steam-boat proprietors, but such is their fancy for the *beam* engine, with the beam stuck up about 40 feet in the air,—that they will not willingly abandon it. No doubt, that description of engine is very simple, economical and effective, but still it has the disadvantage I have mentioned attending it; and which, in my humble opinion is fatal to the attainment of the greatest speed. It is also, I think, unsuited to ocean navigation.

By my invention, which can be seen by reference to my patents No. 215 and No. 630 for 1854, I am enabled to give greater length to steamers, in proportion to their breadth of beam and depth of hold, than can be given to them in any other way. Much finer lines and lighter draught of water are obtained, whilst a much greater power, in proportion to tonnage, can be used, than by any other mode of construction. Larger paddle-wheels than any now in use in this country can also be employed, and without wheels of large diameter, no very great speed can possibly be attained. In obtaining these desirable improvements I also obtain greater strength, owing to the peculiar mode of constructing the sides of my ships, and of strengthening them from the floor timbers up to the cabin floors. Although the details of my plan may not be perfectly understood by the general reader without reference to drawings, it is probable that the following brief description may be intelligible to most of those who read this paper:—

The ordinary mode of building ships is to give them a *sheer* which raises the bow and stem higher than the centre of the vessel, so that, in fact, the centre of the vessel is weaker than at any other point; the consequence is, that long vessels have a tendency to droop at either end. Instead of adopting this plan, I pursue one directly opposed to it, and while I preserve the sheer of the vessel and retain the present appearance of the main deck, I raise the sides in the shape of an arch, so that the sides of the ship, at the centre, shall be about ten feet higher than any other part of the vessel. At the top of the arch or raised side, I connect it with a strong bar of wrought iron, which extends the whole length of the raised side, and down towards the bilge of the vessel, forward and aft, so that the strain is distributed over the greater portion of those parts of the sides which would otherwise be too weak, in proportion to the extreme length of the ship,—this bar of wrought iron extending to about three-fourths the length of the vessel; and I connect the raised sides of the vessel about eight feet above the main deck, by iron beams across the vessel, which will form an upper or spar deck, and may be extended as far forward and aft as the builder may desire. I also add to the strength of the vessel, by having a centre kelson extending from the floor timbers to the cabin floor, with elliptical openings at proper intervals, so as to admit the passage or stowage of fuel and goods. As this kelson will extend from the bow to the stern of the ship, it will be a great support to the vessel, and tend to lessen the vibration which is generally felt in steamers propelled by powerful engines.

In addition to the great advantage of high speed, I am able to afford to passengers comforts to which they are strangers in the steamers used in the channels, in our coasting trade, and to the different European continental ports, where the voyages are comparatively short. Instead of having deck passengers exposed to the weather, they will be perfectly protected by an upper or light spar deck; and cabin passengers may either resort to comfortable state rooms—for I propose to have a sufficient number in the steamers for short voyages to accommodate at least 200 cabin passengers—or they can lounge upon comfortable sofas in large and elegant saloons upon the main-deck. Instead, then, of being exposed to the inclemency of the weather upon deck, and of being drenched with spray or rain, as passengers now generally are in crossing the channel, and of being compelled to travel in wet clothing for several hours by rail—thus laying the foundation for the catarrhal and consumptive diseases, which carry off their yearly thousands of victims,—passengers in my steamers will arrive at their destination free from such exposures, and without sustaining a loss in the destruction of wearing apparel perhaps equal to five times the passage money. All these drawbacks and preventives to travel being removed, and with a great increase of speed, and consequent saving of time, may we not reasonably expect that the passenger traffic between England and the Continent, and between England and Ireland, will be infinitely increased. Instead, then, of its being against the interests of the owners of channel and other steamers to promote the introduction of an improved class of steam-vessels upon their several routes, it appears to me that it is clearly their interest to adopt that plan which will not only add largely to their traffic, but also reduce the expenses to which they are now subject. For instance, between Holyhead and Kingstown there are, I believe, not less than eight or ten passenger steamers employed by two companies. With steamers such as I propose, four would give four departures each way every day, from Holyhead and from Kingstown. There would thus be a saving of from four to six steamers, and of the crews to man them, between the two ports. The same thing may be said of almost every other route where they have the advantage of a commodious harbour to enable long vessels to enter.

As it may be objected to my plan that steamers with upper spar decks would not answer the channel service, I may state that in 1830 the same opinion was confidently expressed in Canada, when it was proposed to construct steamers with upper or spar decks, in imitation of those upon the Hudson River, for service upon Lake Ontario. Before that time it was supposed that no steamers with such top-hamper could live upon Lake Ontario in a gale of wind; for the sea there is very similar to that upon the German Ocean. Experience, however, has proved that the fears of those who predicted their unsuitableness and failure were altogether groundless. At that time, storms were of very frequent occurrence, and steamers built with flush decks, and having all snug below, were often compelled to remain in port, or obliged to put back, owing to stress of weather. Now, however, we never hear of a steamer—built with a spar deck—being obliged to put back or to remain in port from the inclemency of the weather; and the dreadful storms of former years are seldom heard of now. The truth is, that the steamers now employed are far more seaworthy than the old class, besides being twice as fast, and infinitely more comfortable.

The advantage to trade, and, indeed, to every interest in the kingdom, which would result from the use of steamers that would bring distant countries within an easy journey of England, cannot be doubted. Looking merely to Denmark, Norway, and Sweden, the trade and passenger traffic with those countries might be infinitely increased, if the time and expense of the voyage were reduced, and the present discomforts to travellers avoided. The distance from London to Copenhagen is about 820 miles, and the voyage could easily be performed in less than forty hours, and at an expense not exceeding two guineas for first class passengers. At present travellers from England to Copenhagen, to whom time and comfort are objects, are compelled to travel by rail as much as possible, at great expense, and not as expeditiously as they could by water, if steamers upon my plan were put upon that route. I am not aware of the time required to reach Copenhagen by rail and steamer, but I feel assured it must be considerably over forty hours, and that the expense for first-class passengers cannot be less than four or five guineas.

It must be obvious to every one that our trade and intercourse with Hamburg, Bremen, Amsterdam, Rotterdam, Antwerp, Ostend, Boulogne, and Havre, would also be largely increased, if the distance between those places and London could be performed in about one-half the time occupied at present, and at about one-half the cost of the journey by rail and steamer.

Extending our views to more distant countries, steamers of the speed alluded to would bring New York within a week's sail of England; we should reach California and Calcutta in three weeks; Australia within a month; Bombay and Ceylon would be within sixteen days' journey of us; the West Indies within seven or eight days; Alexandria within a week; Constantinople would be reached in less than nine days, and Sebastopol within ten days!

Surely, improvements that would effect such mighty changes are not unworthy the consideration of the merchants and manufacturers of England. Shall it then be said that your enterprise and energy are unequal to the attempt to bring this great improvement to the test of actual experiment. Shall the proposed ameliorations in our intercourse with the world languish and die for want of that support which capitalists alone can supply.

In order the better to appreciate the advantages of quick communication between this kingdom and the different parts of the world alluded to, we have only to look back a few years, and ask ourselves how we should like now to give up even our present imperfect means of reaching those countries, and resort to the slow sailing system of twenty years ago. It is very evident that one of the great reasons for the prosperous state of our foreign trade, is the easy and quick communication we have with foreign countries; and with the speed of that communication accelerated by at least 33⅓ per cent., it seems clear that corresponding advantages must result to the trade and commerce of the kingdom.

Looking at the question politically, what would not now be given by the Government for five or six steamers that could reach the Crimea within ten days, each with 1,500 troops on board, to relieve the over-taxed energies and exertions of our gallant little band of heroes, and their noble commander, who are there upholding the honour and power of England. We know not how long this war may be continued, and it would seem to be the part of wisdom to prepare in time to meet its exigencies. Steamers that could reach Cronstadt and St. Petersburgh in a little over three days may next summer be much required either as despatch vessels or transports for the conveyance of troops and stores. Why, then, should they not be got in readiness now, when the opportunity is afforded of building them. It may not be uninteresting to remark that the cost of a steamer which can carry as many troops as the *Himalaya*, and at a speed exceeding that of that vessel by 100 miles a day, will be at least *one-third* less than the price paid by Government for that steamer; and that I am prepared to contract, in connection with eminent ship-builders and engineers, for the construction of one or several steamers whose speed will be *guaranteed* at not less than seventeen knots an hour. Although we limit the guarantee to seventeen knots an hour, we do not the less expect a speed exceeding eighteen knots an hour, for it must be obvious that a prudent builder will allow himself an ample margin in the rate of speed, to prevent loss on his part.

D. BETHUNE.

17, Hanover-square, London, Nov. 20, 1854.

AMERICAN PATENTS.

ANNUAL REPORT OF THE COMMISSIONER OF PATENTS.

Sir,—I have the honour to report to you that the business of the Patent Office is now in a more satisfactory condition than at any previous period since my connection with it.

The number of cases undisposed of in the office on the first day of January last was reported to be five hundred and eighty-two. That number, however, was ascertained through an erroneous method of computation. By an actual count, the number of cases on hand at that time was ascertained to be eight hundred and twenty-three. A correct mode of computation was then introduced, so that the exact condition of the business of the office can hereafter be readily calculated from the monthly reports.

This arrearage in the business of the office, though much less than it had been six months previous, was such that several months always elapsed after the making of an application before it could be disposed of, which was a source of great dissatisfaction to all applicants for patents.

During the three first months of the present year the increase in the business of the office was such that no sensible diminution in the arrearages was effected. In order to accomplish so desirable an object it was deemed expedient to place several of the assistant examiners in the performance of the duties of principal examiners. In that manner the end sought is now almost and will soon be entirely attained.

Instead of six principal examiners, each with two assistants, we have, since the first of April, had practically eleven principal examiners, each with one assistant. Most of the rooms are now entirely filled up with their work, and all will probably be so by the first day of December next. We have already, since the first of January last, issued upwards of sixteen hundred patents, and within the year the number will probably reach the nineteenth hundred, which will be about double the number patented last year. Applications are generally acted upon within a few days after they are made, and I have no doubt that the arrangement by which this result has been produced was judicious, and has proved satisfactory to the parties interested. I think it should be continued as the only method of disposing of the increasing business of the office with the proper promptitude and despatch.

About one year since I had the honour to invite your attention to the importance of several proposed amendments in the patent laws. The reason then given for the alterations suggested remain in full force now, and the recommendations then made are now repeated.

The amendments of most immediate and pressing necessity are those making provision for taking testimony—those in relation to appeals, and those prescribing a new rate of fees.

Many questions of great moment are frequently pending before the Patent Office, depending for a correct decision upon the testimony of witnesses, and there is no power provided to compel a witness to give testimony. Nothing is more common than for a witness to refuse to attend an examination, or to refuse to give testimony after he has attended, to the great perversion of the ends of justice and the object of the patent law.

The law now allows any person who appeals from the decision of the Commissioner to select which of the three judges of the Circuit Court he chooses before whom to bring the appeal. The chief justice of that court will probably never again be able to entertain an appeal, so that bringing an appeal before him is tantamount to its postponement during the term of his natural life, and even after his death there may be some question as to whether the delay will be at an end. By an abuse of this law a case has been suspended in this manner for near two years, and is threatened with indefinite postponement, to the great detriment of the party who is probably entitled to the patent.

The rate of fees was fixed at a time when the real value of money was much greater in proportion to its nominal value than at present. The pay of the clerks and labourers employed in the office has been very much increased by Congress, and in various other ways the expenses of the office have been greatly augmented, while the fees have remained unchanged. In addition to these causes the force of the office has been considerably increased during the present year, in order to dispose of the accumulation of business above referred to.

The consequence of all these causes has been that during the current year the expenses of the office have been continually exceeding the revenues, and such will continue to be the case until an augmentation of those revenues shall be provided for.

The permanent augmentation of the examining corps, or rather such a reorganisation as will place all its members on a proper footing, is a subject worthy of consideration. The assistant examiners who are performing the duties of principal examiners, may justly expect, at no distant day, the compensation attached to those duties and responsibilities. It would not only be highly gratifying to me, but would be nothing more than justice to them to have the means and the authority to make their compensation commensurate with the grade and character of their actual service.

A bill was framed by the Senate committee at the last session of Congress, providing for these and many other amendments, or, rather, it amounted to a general reorganisation of the whole Patent Office system, including the above-named provisions as a portion thereof. The passage of that bill, or of some other which shall at least embrace the features above alluded to, seems to be an object of prime importance to the proper administration of the affairs of this office.

I beg leave to commend these matters to your favourable consideration, in case you deem them of sufficient consequence to merit a place in your annual report.

I remain, sir,
Very respectfully yours, &c.,
CHAS. MASON.

Hon. Robert McClelland, Sec. of the Interior.

Patent Office, Nov. 1, 1854.

THE DOWN-DRAUGHT SMOKELESS FURNACE.

At the last meeting of the Royal Scottish Society of Arts, Mr. Robert H. Bow, C.E., read a paper "On a Smokeless Furnace," illustrated by diagrams. After stating the conditions under which smoke is produced in a furnace as commonly constructed and managed, and the necessity for a very high temperature, combined with an abundant supply of oxygen, in order to effect the combustion of the smoke, the author described three general arrangements under which could be classified nearly all the furnaces that have been brought forward as smokeless; and maintained that the more practicable of these owed their success more to the regular manner in which the fuel was supplied than to any properties of the arrangements; and that, in order to effect the regular feeding of the furnace, somewhat complicated machinery was required, or an amount of attention was necessary on the part of the furnaceman that could seldom be counted upon. The author stated that his invention does away with the necessity for great regularity in the supply of the coal. In his furnace the draught is reversed—that is, the flame, air, &c., proceed downwards through and from the fire, and it is therefore proposed to call it "The Down-Draught Furnace." The principle of its action was stated to be very simple. The smoke liberated from the superincumbent coal, is, by means of the suction of the chimney, carried, along with a due admixture of air, down through the brightly burning fuel which forms the lower stratum of the fire, and thus becomes intensely heated and completely burnt. Contrary to what might have been expected, the combustion is very rapid: in some experiments, made in 1852, with a grate of five-eighths of a square foot in area, the combustion was at the rate of thirty pounds of coal per square foot of grate per hour; the height of the chimney being nearly thirty-five feet. This result is probably due to the self-clearing power of the furnace, and the comparatively dense state of the air when it mingles with the fuel. The combustion readily spreads upwards to the fresh coal from the action of the strong radiant heat. The author stated that a common iron grating cannot be employed in this furnace, as it would rapidly become oxidised or burnt. The following are some of the methods that may be adopted for overcoming this difficulty:—1st. The fuel may be burned in a V or L shaped cavity. 2nd, A perforated or open-work structure of fire-proof clay or stone may be employed to support the fire; and 3rd, Tubes containing water, either communicating with a boiler, or otherwise supplied, may be substituted for the fire-bars.

The invention was referred to a committee to report upon its merits.

PHOTOGRAPHY.

Considerable interest has been excited during the past week amongst all concerned in practising this art by the proceedings in the trial of Talbot *v.* Laroche. Mr. Fox Talbot, as is well known, claims to be the inventor of the art, including of course the Daguerreotype, and in 1841 took out a patent for the process as applied to paper. He subsequently received from the Royal Society the Rumford Medal for his discoveries in connection with the art. Little appears to have been done for some years after the granting of the patent, and it was not till 1851 that much practical progress was made, when the Great Exhibition brought to light numerous beautiful specimens produced by modifications of the process as detailed in Mr. Fox Talbot's specifications. At that time Mr. Archer brought out what is known by the title of the Collodion process, by means of which an immense rapidity in the production of pictures was gained, as well as finer and more perfect results than the paper process was capable of producing. The great rapidity thus obtained rendered the process peculiarly fitted for the taking of portraits. Mr. Fox Talbot, under the terms of his specification, which were very large and comprehensive, claimed the collodion process as included within it, and many persons practising the art for gain took licenses from him. Mr. Fox Talbot, at the earnest representations of Lord Rosse, the president of the Royal Society, and Sir Charles Eastlake, the president of the Royal Academy, was induced to throw open his patent to the public generally, reserving only his right to the use of the art in portraiture, when exercised for gain, and not for amusement only. From the very first it was questioned how far the collodion process could be considered included in Mr. Fox Talbot's patent, and the present action was brought by Mr. Fox Talbot against Mr. Laroche for an infringement by using the collodion process for the taking of portraits for gain. The case was tried last week, and occupied two days and a half. The defendant disputed the validity of the patent as a matter of law, on several points arising out of the specification, which were reserved for the opinion of the Court above, and he put in issue the questions of fact, whether Mr. Talbot was the true and first inventor, and next, that whether the patents were valid or not, he was not guilty of infringement by using the collodion process. Evidence was adduced on the part of the defendant to shew that the real inventor of the process was the Rev. Mr. Reade, and that he had made it known and had exhibited pictures produced some time previous to the grant of Mr. Fox Talbot's patent, and that, besides this, Mr. Fox Talbot had been made aware of the fact at the time. The evidence of a number of scientific men and others was adduced on both sides as to the precise nature of the collodion process, and that specified by Mr. Fox Talbot.

The judge, at the conclusion, summed up the evidence in a remarkably lucid and impartial statement to the jury, evincing a thorough knowledge of the complicated subject, and the chemical and other matters which had been brought before the Courts. "The questions," he said, "the jury would have to determine were, *first* of all, did Mr. Reade know of the use of nitrate of silver and gallic acid in connection with iodide of potassium? But knowing it alone would not do, if he had had that knowledge before February, 1841, did he make it known to the public? And, if he did, Mr. Talbot was not, for the purposes of the patent, the first and true inventor. *Secondly*, on the plea of not guilty, was the use of collodion with nitrate of silver and iodide of potassium the same as Mr. Talbot's process, gallic acid being part of Mr. Talbot's process, and being absent altogether in the collodion? That, however, would not do, if in the collodion the same result was obtained by a chemical equivalent, and upon that they would have to consider whether gallic acid and pyrogallic acid were in substance, for this purpose, the same."

The jury, after an absence of three-quarters of an hour, returned into court, and delivered a written verdict, whereupon the judge, Chief Justice Jervis, said:—

"Now I will ask you the question. Do you find that Mr. Talbot is the first and true inventor?

"Foreman.—Yes; the publisher.

"Chief Justice Jervis.—That is, within the meaning of the patent laws—that he was the first person who disclosed it to the public?

"Foreman.—Yes.

"Chief Justice Jervis.—And you find that the defendant was not guilty?

"Foreman.—Yes.

"Chief Justice Jervis —Under the Patent Law I will certify that he was the first and true inventor."

The result of the verdict is that the collodion process is not comprehended within Mr. Talbot's patent.

ON CHARCOAL AS A DISINFECTANT.

By Mr. J. G. Barford, St. Bartholomew's Hospital.

(From the *Lancet*, Dec. 16.)

The substances with which we are acquainted as disinfectants or deodorizers are—chlorine, chloride of lime, lime, charcoal, &c., each of which possesses this power to a certain degree, but not all acting in the same manner. The disinfecting power of chlorine depends on its affinity for hydrogen, thus decomposing water or aqueous vapour by uniting with the hydrogen, while the nascent oxygen oxidizes the organic matter, so that unless aqueous vapour is present, chlorine loses a great part of its disinfecting power, and simply disguises the noxious effluvia, and is itself an irritating, offensive, and corrosive substance. Chloride of lime acts by the oxidation of the putrescent matter, but to do this effectually it requires the presence of an acid; thus, unless a considerable quantity of carbonic acid is present to decompose the hypochlorite of lime, and give rise to the evolution of hypochlorous acid, the chloride of lime will do but little as a disinfectant. Lime acts by the absorption of carbonic acid and sulphuretted hydrogen, leaving other noxious gases unaltered; thus they are all open to serious objections; but the one which practically will be found the most effectual, I believe, has received the least patronage. This is charcoal—a body whose disinfecting powers have long been known, but its mode of application has been quite neglected.

Dr. Stenhouse lately called attention to his very ingenious ori-nasal respirator, which depends on charcoal for its efficacy, the action of which is given in the *Journal of the Society of Arts*, for February, 1854. The respirator having been noticed in the *Lancet* of November 25, I need only mention it as an instance of the powerful disinfecting power of charcoal, but at once call attention to the plan I have adopted in the application of this agent as a disinfectant, bearing in mind the results of Dr. Stenhouse's experiments, which prove that charcoal not only absorbs noxious vapours and putrescent odours, but at the same time oxidizes them, or in other words, makes them undergo a slow but sure combustion, which must have its end in the conversion of deleterious gases into compounds whose physical and chymical properties would admit of an easy separation or removal from their bed of formation, and which on evolution would not be the least deleterious. I therefore, previous to its use, heated the charcoal thoroughly in a covered crucible with a small hole in its lid, to allow any oxidized material which it might contain to escape, taking care not to have the hole sufficiently large to allow the charcoal to undergo combustion; when thoroughly heated it was allowed to cool, so that on exposure to the air it should not oxidize; in this state it was put into shallow vessels, and placed wherever putrescent odours existed, and in a few minutes the whole of the smell disappeared; but in a day or two the charcoal lost its power. I then thoroughly heated it again, with the same precautions as before, and placed it to perform its duties a second time, which it did with as much efficacy as on the first application. Thus, by the repeated cleansing of the charcoal every or every other day, it does not deteriorate, but the same quantity will effectually remove noxious gases for an indefinite period of time.

With Mr. Holden's permission I was enabled to give it a most perfect trial in the dissecting-rooms of St. Bartholomew's Hospital, which at this time of the year must abound in noxious gases and putrescent odours. Thoroughly heating the charcoal, and placing it in shallow vessels about the rooms, it acted so promptly that in ten minutes not the least diffused smell could be detected. So quick and effectual was its action that arrangements are being made for its constant use. It answers just as well as a purifier of water-closets, drains, wards of hospitals, and sick rooms. As a purifier of hospital wards, both civil and military, it might be applied with great advantage, saving patients from the unpleasant smells and effluvia from gangrenous sores, and for this purpose a wire gauze construction, containing the charcoal, might be made to surround the affected part at some distance from the dressing; thus the patient himself and those in adjacent beds would not be subjected to the influence of the putrescent odours. All these the charcoal would effectually absorb, doubtless with advantage to the patient and his neighbours also. Other quantities of charcoal might be placed in shallow vessels about the wards, and purified every morning, as above-mentioned. Being at the command of the poor as well as the rich, it admits of universal use; and, though it may be objected to as a purifier of the wards of hospitals and chambers of the sick, under the fallacious notion that it would emit carbonic acid, and also on undergoing its daily cleansing would again give off the absorbed gases, yet this notion can never enter the minds of those who understand its action, seeing that carbonic acid cannot be generated unless the charcoal is heated in free contact with the air. This is prevented by having a covered crucible in which it can be heated to any temperature without undergoing combustion; and the supposition that the absorbed gases are given off again when the charcoal is heated will be removed by the fact that they are all oxidised, and converted into sulphuric, nitric, or carbonic acid, and water, &c., and the heating of the charcoal is for the whole and sole purpose of removing these bodies, which exist in so small a quantity that they could not be the least prejudicial, even if driven off in the centre of an inhabited room; but, of course, they all pass up the chimney. Thus charcoal is more efficacious than any other disinfectant when applied as above described, absorbing gases of whatsoever kind, not requiring the presence of any other substance to resist its action, but without stint or scruple collecting noxious vapours from every source, not disguising, but condensing and oxidising the most offensive gases and poisonous effluvia, converting them into simple, inert, staple compounds; it is simple and economical, coming within the reach of the poorest, and can safely be placed in the hands of the most ignorant, thus combining advantages not possessed by any other disinfectant.

REDUCTION OF FRENCH POSTAGE

A new postal treaty has been entered into with France, the principal effect of which will be the reduction of the postage upon prepaid letters weighing not more than ¼oz. (a weight which includes the great majority) to 4d., instead of 8d. or 10d., as heretofore. This reduced postage of 4d. will carry the letter from any part of the United Kingdom to any part of France or Algeria. If the letter be posted unpaid the charge will be double. Under the provisions of this treaty the postage on letters passing through England or France will also in many cases be reduced. On all these points detailed information will be issued. The new treaty will come into operation on the 1st of January

PUBLIC LIBRARIES AND MUSEUMS.

A bill, just prepared and brought in by Mr. Ewart, Mr. Brotherton, and Mr. G. A. Hamilton, proposes to repeal the Library Act of 1850, but not to invalidate by such repeal anything done in pursuance of the same act, or to disturb already established libraries and museums. The object of the bill appears simply to extend the benefits of the measure of 1855 to towns governed under local acts, and to parishes. For this purpose it requires the council of any municipal borough of which the population shall exceed 5,000 persons to call a public meeting, on the requisition of 10 persons paying the borough rate, in order to determine whether this act shall be adopted for the said municipal borough; and, if at such meeting two-thirds of the persons present and qualified as aforesaid shall determine that the act ought to be adopted, the same shall thenceforth take effect and come into operation in such borough. The expenses of carrying the act into execution are to be defrayed from the borough fund, and the council is empowered, if it think fit, to levy a separace rate for the purpose. "Improvement Boards" may adopt the act and charge the expense on the improvement rate, if the previous requisitions with regard to population and the decision of two-thirds of a public meeting be complied with. Parishes with the same population (5,000) may adopt the Act, with the consent of two-thirds of the ratepayers, and the vestry will then appoint from three to seven commissioners from the ratepayers, to carry the act into effect, to dispose of lands, and to sue and be sued as a body corporate. One-third of this commission will go out of office annually. The expenses are to be paid out of the poor-rate. The vestries of two or more neighbouring parishes, having an aggregate population exceeding 5,000 persons, may conjointly adopt the act in the manner already described, the expenses to be borne in proportion, and three commissioners may be appointed by each parish to manage the library or museum. No rate levied for the purposes of this act in any borough, district, or parish, is to exceed one penny in the pound. The councils are empowered to borrow sums of money for the purposes of the act, with the approval of Her Majesty's Treasury, and the Public Works Loan Commissioners are empowered to advance such sums of money. Lands, &c., may be appropriated, purchased, or rented, for the purposes of this act. The general management and control of the libraries and museums formed under this act is to be vested in the councils of boroughs, in the boards of districts, and in the commissioners of parishes; and all real and personal property purchased for any library or museum is to be vested in the same respectively. All libraries and museums established under this act are to be open to the public free of all charge.

INSTITUTION OF CIVIL ENGINEERS.

ANNUAL GENERAL MEETING.

At the last meeting of the Institution, Mr. James Simpson, President, in the chair, the annual report of the retiring Council was read, and the meeting proceeded to the election of the President, Vice-Presidents, and other Members of the Council for the ensuing year, after which the medals and premiums which had been awarded were presented.

The leading events of the political world and particularly the occurrence of war, were alluded to, as having tended to arrest the progress of civil engineering works, whilst, on the other hand, the mechanical engineers had found ample employment in supplying engines, machinery, vessels, tools, and stores of all kinds for the use of the army, the navy, and the mercantile service. The fact of the aid of civil and mechanical engineers being so extensively sought for, in conjunction with the army and navy, was alluded to, and the cases in which their combined efforts had conduced so essentially to mutual benefit were shown. Allusion was also made to the novel expedient of sending out a corps of "navvies" and other artizans to lay, as it was expressed, "the first section of the railway from Sebastopol to St. Petersburg." The production of the Lancaster rifled cannon, and of the wrought iron ordnance, by engineers, and the investigation for the Government, by a member of the Institution, into the manufacture, boring, and firing of rifles, were noticed.

The few large works of civil engineering now in progress in Great Britain were then mentioned, and the impetuous onslaught of the Home Secretary upon the smoke and other nuisances of the metropolis was noticed, with the view of directing, to those points, as also to the general sanitary questions and to the sewerage of the metropolis, the attention of civil engineers, whose advice would be found trustworthy, and who would discriminate between sound systems and the nostrums and baseless schemes which were now ignorantly thrust forward.

The extensions of the feeding mains of the principal water companies to points high up the river, beyond the influence of the tidal range, and, in two cases, the removal of the entire establishments, in order to afford almost unlimited supplies of the best water for domestic purposes, was noticed; and it was pointed out, that it was now only necessary to afford such an ample supply of water, at a sufficient elevation, on the north side of the Metropolis, as would enable the sewers to be constantly flushed, and that their contents should be delivered at positions, so low down the Thames, as to preclude the necessity for the mechanical lifting of the sewage, excepting for a limited area, and for those portions under high-water mark, and thus the noble metropolitan river might be rendered as pure as was practicable, for a stream flowing amidst habitations, and necessarily subject to some degree of pollution.

A slight sketch was given of the progress of railways on the Continent,—in the Colonies,—in America,—and, in fact, throughout the world, and in every quarter members of the Institution were to be found earnestly pursuing their calling. On the Continent, the main lines were being extended, so as to bring the chief capitals of Europe within a few hours' journey of our Metropolis, whilst the Electric Telegraph accompanied and frequently preceded the lines, for that more rapid communication which had now become indispensable in mercantile, political, and social relations. In Egypt, and in India, portions of the main lines were in use. In the Colonies small local lines were at work and large schemes were projected. In Canada, the Grand Trunk Railway was noticed, as being fraught with immense commercial and political importance; the great work on its course,—the Victoria Bridge,—was described as spanning the St. Lawrence, at Montreal, by a wrought-iron tubular structure of, including the abutments and embankments, nearly 9,000 feet in length, employing for its manufacture 10,400 tons of iron. The Norwegian and Danish railways, recently opened, were described, as also the preparations made at Lowestoft for the encouragement of the trade with those countries. The railways in the United States of America appeared not to have taken any great extension during the past year, although the project of extending a line on towards California had been favourably received.

The successful opening and subsequent progress of the Crystal Palace at Sydenham was noticed; and it was shown that in the projection, the prosecution, and the support of this great work, many of the members had been actively engaged; and the same energetic aid was asked for the approaching "Exposition" at Paris, in 1855; the Council had given their best aid to the Government in the matter, and it was specially impressed on members to send only such models and specimens of works and machinery, as should sustain the high character of the British engineers and manufacturers.

A sketch of the statistics of railways in Great Britain was then given. It was also represented, how essentially the civil engineers could contribute to the investigations of antiquaries and archæologists, by immediately reporting to the Antiquarian Society the finding of any objects during the course of excavations, and by transmitting the objects found to that Society, for a report, before depositing them in the national collection at the British Museum.

Sketches were then given of the subjects of the principal Papers read during the past session, for part of which Telford medals had been awarded to Messrs. Beardmore, Henderson, Smith, Hobbs, and Yates; and Council premiums of books to Messrs. Harrison, Clark, Simpson, jun., Peniston, and Chadwick, which, in the course of the evening, were duly presented; the President noticing, the advantages to be anticipated from the examination, by Mr. Henderson, of the great steamers and other large vessels of the present day; alluding, also, to that now building by Mr. Scott Russell, under the direction of Mr. Brunel, V.P. ;—the valuable enquiries opened by Mr. Harrison's view of the state of the drainage of the district south of the Thames ;—Mr. Beardmore's and Mr. Peniston's account of the works of improvement on the Lea, and of a tunnel on a railway ;—Mr. Piggott Smith's paper on Macadamizing the streets of towns ;—Mr. Simpson, junior, on the smoke question ;—and Mr. Chadwick on water meters; all subjects of importance in a sanitary point of view ;—Mr. Clark's description of the novel mode of propulsion exhibited by the 'Enterprise,' intended especially for the Deep Sea Fishing Company; —Mr. Hobbs, on locks, eulogising particularly the honesty of purpose, and the temperate enunciation of startling facts exhibited in the communication; and Mr. Yates's Paper on the Decimal Coinage, &c., in the investigation of which much industrious research had been shown.

Numerous valuable presents of books, maps, charts, &c., were announced, as also the presentation of the portrait of another Past-President, Mr. Joshua Field: special allusion was made to the bequest of the late Mr. B. L. Vulliamy, Assoc. Inst. C.E., of a large and very valuable collection of works on horology, second only to the collection in the library of the Clockmakers' Company. The thanks of the meeting were unanimously given, with a vote of condolence to the family, on the loss they, in common with all his friends, had sustained, in the decease of Mr. Vulliamy.

The past year had witnessed extraordinary mortality among the members; the deceases of two honorary members, nine members, and nine associates being recorded. Among them were the first honorary secretary of the Institution,—a distinguished Prussian Minister,—some very old and well known members and associates,—as also some younger men who promised to become ornaments to the profession,—and an associate member of council (Mr. C. Geach, M.P.), well-known and esteemed by all the Institution, as one of those energetic, enterprising men, who gave vitality to every speculation in which they engaged, and who, by the uprightness of their transactions, and the justness of their views, upheld, worthily, the credit of the British capitalist and manufacturer.

The great mortality in the Royal and other Societies was also noticed, and allusion was made to the intelligence, brought by Dr. Rae, of the melancholy fate of Sir John Franklin and his devoted companions, martyrs to the cause of science; and the meeting was called upon to unite with the Council in the expression of sorrow for the sad termination of the career of a man, who was equally distinguished by his devotion to his duty as an officer, his enthusiasm in the prosecution of scientific research, and his general public and private worth ;—and as a parallel case exhibiting the devotion and the noble sense of duty of the officers of the British army, the case was cited of that "noble old man," the late Colonel Moore, who, on the event of the burning of the vessel bearing towards the Crimea part of the 6th Dragoon Guards, "with none of the excitement of action, or of the glory and enthusiasm of the battle-field to animate him, faced, in cold blood, the most terrible death that man could meet, and refused to leave the burning ship while any of his men were alive upon it."

The deceases announced were Messrs. Arthur Aikin (the first honorary secretary). and Peter Christopher Wilhelm Beuth—honorary members; Edmund Scott Barber, George Watson Buck, John Donkin, Alexander Easton, Henry Fowler, Daniel Pinkney Hewett, William Radford, William Stuart, and James Trubshaw—members; John Armstrong, Charles Geach, M.P., Nathan Gough, Benjamin Louis Vulliamy, Alderman William Thompson, M.P., Colonel John Neave Wells, R.E., Lieut.-Colonel John Augustus Lloyd, Captain Joshua William Coddington, R.E., and Lieutenant William Chapman, R.E.—associates.

Memoirs of the deceased members of all classes, were ordered to be printed as an appendix to the annual report

The resignations of fourteen members and associates were announced.

The financial statement showed the funds of the Society to be in a very prosperous state, since, by the voluntary contribution of the members of all classes, the printing debt had been paid, and, after giving the detail of a special general meeting of members, convened for the purpose of introducing some modifications into the bye-laws, which had, however, been demonstrated to be unnecessary, and therefore were not made, the report concluded by announcing that two parts of volumes XI. and XII. (together upwards of 800 pages), of the minutes of proceedings, had been issued, and the editing and printing of all the remainder would proceed with all despatch.

The thanks of the Institution were unanimously voted to the president, vice-presidents, and other members and associates of council; as also to the auditors, the scrutineers of the ballot, and to the secretary, for their several services.

The following gentlemen were elected to fill the several offices in Council for the ensuing year :—James Simpson, president; G. P. Bidder, I. K. Brunel, J. Locke, M.P., R. Stephenson, M.P., vice-presidents; J. Cubitt, J. E. Errington, J. Fowler, C. H. Gregory, J. Hawkshaw, T. Hawksley, J. R. McClean, C. May, J. Penn, and J. S. Russell, members; and H. Hensman, and Sir J. Paxton, M.P., associates.

The meeting was then adjourned until Tuesday, Jan. 9th, 1855, when, it was announced, that the ballot for members would take place, and the discussion would be resumed on Mr. P. Barlow's paper. "On some peculiar features of the Water-bearing Strata of the London Basin."

Home Correspondence.

DISTRIBUTION OF PUBLIC DOCUMENTS.

SIR,—In the Journal of the 10th November last (No. 103), Dr. Purvis suggested the desirableness of supplying the *London Gazette* to Institutions.

The newspapers extract, and extract correctly, all that is really interesting that the general public should know from this purely official paper. I do not think that the members of the majority of the existing Institutions would care to be informed, with all the minuteness of an official document, that there is now a beacon to indicate the position of the Jœdderen Reef, or that there is a light on Winga Skeer, however interesting such announcements may be to the Greenwich Institute, nor would they be interested to wade through seven or eight pages of "Weekly returns of the quantities and price of British corn, imperial measure, as received from the inspectors and officers of excise," &c., &c., or as many pages of an "Account of the average amount of bank notes of the several banks of issue in England and Wales," &c., and, probably, were all the Institutions supplied with the Parliamentary papers, these would be regarded much in the same light as the *London Gazette*.

But I think the Council of the Society of Arts would confer a benefit upon us if they would appoint a Committee to act the part of the newspapers, and kindly select or point out such parliamentary papers, reports of committees and public bodies, evidence upon public questions, &c., as would be instructive to members of Institutions generally, or be valuable works of reference to preserve; and there are few Institutions, I think, who could not obtain such of these documents as they wished to possess when so pointed out, through members of parliament representing or interested in their behalf.

I am, sir, &c., &c.,
THOMAS EDGWORTH,
Treasurer of the Wrexham Literary and Scientific Institution.
Wrexham, Dec. 23, 1854.

LIMITED LIABILITY IN PARTNERSHIPS.

Sir,—'Limited Liability in Partnership' has become now an expression so familiar to all the world, that it seems almost a paradox to ask those who use the expression and express opinions, some for and some against whatever this "limited liability" may be, what it is they really mean. Nevertheless, I strongly suspect that very few who use the term have any distinct understanding on the subject. For my own part I will at once confess that *I do not know* what is meant by the expression, and perhaps your readers will be yet more startled at my asking them "What is a partner?" If, however, every person will but place this question honestly before himself, the answer in, I fancy, every case will be, "I don't know." If we do not know what is a partner, the rest of the expression must mean—*nothing*.

Nevertheless, I am disposed to believe there is some very indefinite and ill-defined meaning attached to the phrase "Limited Liability in Partnership," by those who make use of it. Evil results have been seen to arise from contracts being fastened upon people into which they never entered or dreamed of entering; burthens thrown upon one to the relief of another never contemplated by either party, and all by force of this magic word "partnership." What is a partner? I don't know! The law has never told me, and until it does, I must continue not to know. What it ought to be I can discover, just as one has endeavoured to find out what copyright and patentright ought to mean; but as to what a partner is, the law is silent, and therefore so am I.

I think, sir, this plain statement of the case will be at once an answer to Mr. Elliott, and to the late Royal Commissioners on Commercial Law; by whom it has been decided, (Bramwell and Hodgson dissentient) that the commercial law of this country, and partnership law in particular, is in its utmost state of perfection.

Those who hold this opinion are bound to point out where that law is to be found. Ask for the law on any point, and after searching through Acts of Parliament contained in 90 volumes post octavo, and 900 volumes of reports, I may or may not find the point in question expressly decided and uniformly in one way. If I do, then there is the law upon it; if, as more usually happens, I do not, then there is no law upon the subject, and I can only express an opinion of what it is likely to be declared to be, *i.e.*, which of all possible psychological events on a particular occasion in the future is, I think, the most likely to happen, the psychological event in question being what shall happen in the mind of the judge when the question arises, the judge, that is, the legislator, *pro hac vice* and *ex-post facto*. Ask the Lord Chancellor what the law *is*, and according to your mode of asking will be his answer. Ask him in the proper manner, and he will not only tell you what the law is, or what he says it is, but also mulct you in some scores, hundreds, or it may be thousands of pounds, for not having known what you could not have known, because it was not in existence. Ask him in any other than this proper manner, and he will give you *his opinion* of what he says the law is, but really his opinion of what will most probably be enacted by the judges, including himself, whenever asked in the aforesaid proper manner, enacted I say, for though every judge tells you he sits not to make, but to execute the law, so long as there is no law, he makes the law as occasion requires.

Now, sir, I quite agree with Mr. Elliott in all his arguments, but I dissent from his attempted application of them. I do not suppose that any alteration, say rather establishment of the law on the subject of partnership or any other subject, will convert reckless and dishonest into prudent and trustworthy traders. A very different process to that of law-making is necessary to this end; nevertheless I do think a great deal may be done by the law in the way of facilitating industrial efforts, and especially by the removal of the shackles at present fettering it—such, for instance, as the intolerable uncertainty, expense, vexation, and delay, attending everything having reference to law. But, in replacing the present no-law by a system of law, I would earnestly recommend those to whom such a task (50 years hence, perhaps) may be intrusted, to try and find out what the law ought to be, and in accordance with what it ought to be, to make it. The science that shall enable them to do this is not at present in existence. Legal science, though the possibility of its existence has long been imagined, exists still only in imagination, yet is there nothing that should frighten us from attempting its investigation; and such investigation must be undertaken before any really good system of law can ever be hoped for.

For this reason I should not expect any *very* great results from the commission proposed by Mr. Leone Levi, though I should, indeed, be sorry to damp his ardour in the cause. I fear we are still too ignorant of what law should be, too little apt to adopt any steady guide in the determination of legal questions; and yet questions of law, or say of legal science, are *not mere questions of opinion*, but questions of correct or incorrect, true or false, balance of good upon one side or upon the other.

This, however, is little regarded, and the entire want of investigation into the principles of this science leaves all legislation to empiricism and opinion; nevertheless, I think such a commission as suggested by Mr. Levi would be of service, if but for the purpose of collecting data, and most especially if it should endeavour to establish one uniform system of measures of length, surface, capacity, weight, and value, among the nations joining in the commission. To this point I most respectfully draw the attention of Mr. Leone Levi.

I enclose my card, and am, sir,
Your most obedient servant,
L.

MANUFACTURE AND APPLICATION OF PRODUCTS FROM COAL:—BENZINE.

Sir,—I shall feel obliged by your allowing me to correct some historical errors in a passage of Mr. Crace Calvert's paper on "Products from Coal," read before the Society of Arts on November 22, and printed at page 19, col. 2, of vol. ii., of your Journal.

"When this rectified naphtha (from coal tar) had been submitted to a series of further purifications, it had received from an eminent French chemist, named Pelouze, the name of 'Benzine,' which had the property of removing, with great facility, spots of grease, wax, tar, and resin, from fabrics and wearing apparel, without injuring the fabric, its colour, or leaving any permanent smell or mark, as was the case with turpentine. Benzine had, through his (Mr. Calvert's) exertions, been introduced into England, and had been found most valuable in brightening velvets, satins, &c. The numerous uses to which this valuable product could be applied in manufactures, must, in time, render it of extensive employment in place of alcohol and other fluids."

One part of the passage which I have above cited is true, another is not true. What is said of the utility of benzine,—that is to say of the substance "benzine," as Mr. Calvert must have meant,—not of the name "benzine," as he really says—is true. What is stated of its history is not true.

Benzine is another name for Benzole. The substance known by either of these names is not merely coal-naphtha purified. It is a certain definite hydro-carbon, as distinct a liquid as water, having peculiar properties of its own. This oil or spirit was discovered by Mitscherlich, the eminent German chemist, as a product of the decomposition of benzoic acid. To this substance, which, so obtained, is only an interesting, and rather precious, chemical curiosity, Mitscherlich, not M. Pelouze, gave the name "Benzine." This name afterwards was changed by some German chemists to "Benzole," in conformity with a useful fashion of giving similar terminations to the names of compounds of similar nature. Substances which contain nitrogen, and confer alkaline properties on water, received the termination "in" or "ine;" the names of hydrocarbon oils were made to end in "ol" or "ole."

Again, not M. Pelouze but I, discovered that benzine or benzole could be prepared in large quantities from coal-tar-naphtha. It is not, however, so easy to obtain it thus in a state of purity, as to prepare it mixed with a small quantity of other hydrocarbons, which do not not materially affect its properties. To this somewhat diluted product the name "Benzine" or "Benzole" may be given in practice, as we call a liquid containing spirit slightly diluted with water, "alcohol."

Again, I, and not M. Pelouze, nor Mr. Calvert, first observed the very useful properties which fitted this benzine or benzole for an abstergent of grease. Lastly, I, and not Mr. Calvert, made the "exertions" by which this most useful liquid was introduced into England. And I worked pretty hard at it, to the measure of my aptitude.

All that, so far as I can learn, M. Pelouze has had to do with benzine, is, that he has taken advantage of the chaotic condition in which our patent laws were a few years back, and has turned another man's, to wit my, labour, to good account. In 1847, it would cost a poor Englishman all his capital to secure patent-rights for his inventions at home, and would leave him nothing for the purchase of privileges abroad. I have been told that M. Pelouze is "making a good thing" of benzole in Paris; but I had been informed that not "Benzine," but "Essence Colin," or "Colla," or some such name, is the appellation which he has bestowed upon it.

Now, I am neither a dog in a manger, nor a fox at the grapes. Benzole has never yet yielded me anything but hard work, but I don't wish to prevent any brother-Frenchman, be he professor, or layman, from drawing much profit from my discovery. Neither will I say that French benzine, or essence, or income-in-francs, is, or would be, sour, or otherwise unpleasant. But I must say that I should be very sorry to be receiving reward on either side of the channel for another man's work.

What Mr. Calvert has to do with benzine seems to me to be this. I learn from the *Chemical Gazette* for October 16, 1854, p. 399, that letters patent have been granted to Mr. Calvert for making benzine from coal-naphtha and from other similar matters, and for applying his product to the cleansing of fur, wool, and woollen and other fabrics. And now Mr. Calvert appears to be making "exertions" towards "introducing" his patent to the public.

Now, however free any Frenchman, professor or layman, may be to make and sell benzine in France, where I could not afford to buy a "*brevet*," I do not feel that Mr. Calvert is thoroughly welcome to walk in and claim my discovery, and the rewards thereof, in London.

Mr. Calvert has made two discoveries:—first, that benzine or benzole may be made, by a certain simple process, from coal-naphtha;—second, that benzine or benzole so prepared will remove grease, resin, &c., from textile fabrics, &c., leaving no mark or permanent odour. Now, I do not know where, or how, Mr. Calvert made these discoveries; but I may be allowed to state where or how he might have achieved them. He might have found them in print, thus,—In the *Quarterly Journal of the Chemical Society* for 1849, vol. i. in a paper written by me, entitled, "Researches in Coal Tar," at pages 257, 264, under the heads "Of the Preparation of Benzole from Coal Naphtha," and "Of a Practical Mode of Preparing Benzole," the first of his discoveries is ready at hand. At page 261 of the same paper, under the head "Of some Useful Properties of Benzole," his second point is indicated. Both these matters were farther exemplified in a pamphlet which was published for me in 1849, by Parker, West Strand, with the title "Benzole; its Nature and Utility." As to the latter of them, Mr. Calvert might have found at page 35 of this little book these words:—"As a solvent for grease of all sorts it (benzole) is unequalled, and its ready volatility may render it, in many instances, of extreme value as a detergent, disappearing as it does entirely after having done its work."

But further, Mr. Calvert might have gleaned from the pages of the *Mechanics' Magazine*, 1848, July 8, p. 43, a scrap of information that might have been useful to him, to the effect that letters patent were granted to me on November 11, 1847, for the manufacture of, amongst other things, this benzole or benzine. He might also have found the whole specification of my patent printed in the "Repertory of Patent Inventions," for July and August, 1848. I did not therein specify, contenting myself with indicating (as at vol. xii. page 29, of said "Repertory"), that particular use which Mr. Calvert claims, of this *factotum* oil or spirit. I abstained from specifying this and other applications of it, on the special advice of my patent agent that I should leave ground open for other persons to use my product; since the greater the number of free uses of it, the greater should be the demand for it. But to have "patented" all the uses of this wonderful substance, would have been to cover everything with my specification. Another person has recently taken out letters patent for another application of benzole,—the use of it in the manufacture of quinine. This was also pointed out by me in some of the passages to which I have above referred.

As Mr. Calvert has given to my property so very high a character, which, indeed, it truly deserves, I ought, perhaps, to feel somewhat obliged to him. I am glad, therefore, for his sake, that "letters patent" are cheaper now than such luxuries were in 1847. He will not have paid so much for his, I fear useless possession, as it might have cost him if he had been earlier in the field. I am sure he will be obliged to me for correcting the errors into which he has fallen.

I should, perhaps, also thank Mr. Calvert for informing me, as he does in the same paragraph from which I have above cited a sentence, that "nitrobenzine," or nitrobenzole, as I used to call it, is "every day becoming more and more employed as a substitute for essence of bitter almonds, and used for flavouring dishes and communicating scents to perfumery, soap, &c." This substance was also one of the subjects of my aforesaid, still valid, patent. Of course I am glad that some one benefits by my labour; but specifying an invention under letters patent used to be rather an expensive mode of communicating information to the public.

The old patent-law fell hard upon poor inventors; it swallowed their means, and left them no cash-tools to work their projects, or money-weapons to fight the pirates.

Excuse the length and subject of this letter, and accept my best thanks for your space. Egotism is dirty work, and I am sorry to sully my pen or your pages with it; but justice requires that mistakes should be corrected.

I am, sir,

Yours, &c.,

CHARLES BLACHFORD MANSFIELD.

Weybridge, Dec. 5, 1854.

ADULTERATION OF FOOD—BREAD.

Sir,—The subject commented on by Mr. Reveley in his letter in the Journal a few weeks since (Adulteration of Food), is so important, that I think it should not be allowed to drop, the more particularly so as there are several points in that letter which are not so accurate as I could wish. That adulteration exists to a very large extent, not only in the various articles of our daily food, but in drugs, and a variety of other matters, has been proved by undoubted facts. It exists, I believe, to a far greater extent than the public generally have any notion of. But if we are to discuss the subject with any hope of ultimate benefit, the discussion must be entered upon with more carefully selected data than those which the letter dwells upon. We must have careful and impartial examination first, and not the idle tales with which some wag has been hoaxing Mr. Reveley, and which injure the cause he advocates. The adulteration of food, &c., is a question the investigation of which, in my opinion, might be usefully taken up by the Society of Arts, and I would respectfully suggest it for the consideration of the Council. It is a grave and important subject, and must be approached in no *dilettante* spirit; but if, after careful investigation, facts be well and clearly established, and the public made thoroughly aware of the impositions they are daily undergoing, and any practical scheme can be suggested for remedying the evil, the Society will have well earned the thanks of the community. I have said thus much to show that though I differ from Mr. Reveley in his data, I am no sceptic as to the evil, and that it may not be supposed that I enter into the question as a partisan adverse to the general objects of his letter. Mr. Reveley starts with the broad assertion that we are behind the rest of the world in the art of bread-making, and proceeds with the general sentiment that the farmer, the miller, and the baker, are, to use the words of the old song, "three thieving rogues together." Now, sweeping assertions of this kind carry no weight; they create a laugh, but engender no serious belief. If we are behindhand in practical bread-making, let us first have the fact shown, then in what direction our deficiencies lie, and after that we shall have some chance of arriving at improvement. That we may be behindhand in the art of bread-making, I am not prepared to deny; indeed, it is very possible that we may be so, but that it arises from the causes which Mr. Reveley states, no one who has taken the ordinary means of ensuring accurate inquiries will be inclined to believe.

It is, no doubt, the interest of the baker, as Mr. Reveley says, to purchase that flour which will make the greatest quantity of bread from a given weight, (with this proviso, which Mr. Reveley omits, that he does not pay a more than proportionately higher price for it.) To this, however, I do not understand that Mr. Reveley objects, provided that nothing beyond sound flour, water, and yeast, are used. But when it is stated that this can be done by using unsound flour, a flour made from heated or unsound corn, the fallacy is obvious to any one who has any practical knowledge or experience in the trade, or who will take the trouble to acquaint himself with facts. Go into any corn market, show your sample of heated or unsound corn to the first miller you meet, and he will soon give you a practical answer in £ s. d., which will be by no means satisfactory if you have been acting on Mr. Reveley's principle. The best flour is made from the best and soundest corn, and the best flour makes the most good bread; and it is alike the interest of the farmer and the miller to deal in the best and soundest corn. The farmer has, of course, from a variety of causes, (cultivation, soil, harvesting, season, storing, &c.,) necessarily, at times, inferior qualities for sale. The miller, too, cannot get all his wheat of the very best quality, and there is no doubt that he purchases a variety of different qualities, and his art consists in using them in such a manner as to produce the best sack of flour he can; but if the inferiority in quality arises from unsoundness, you may be quite sure that he will not use any more of it than he can help—it will not answer his purpose.

Here, let me remark, that inferiority of quality in wheat does not necessarily mean unsoundness. There is, from the causes I have mentioned, a vast variety of qualities in corn. One grain has, for instance, a thicker skin than another, and bushel for bushel produces less flour, but the flour produced may be equally sound and good with that from wheat more productive of flour. The miller, therefore, in purchasing a great variety of qualities, may get in the end an equally good flour, from his variety, though not so much in quantity as if he purchased what are termed the first qualities of corn.

Mr. Reveley is startled at ninety four-pound loaves being produced from a sack of flour, *i.e.*, three hundred and sixty pounds of bread from 280 lbs. of flour, and asserts that this apparently enormous amount of bread is "fraudulently" produced, because he affirms that a sack of flour will hardly produce 320 lbs. of bread, "if the bread be made at home." I can only say, that I use scarcely anything else besides home-made bread in my family. I have made the experiments repeatedly, with careful weighing, both before and after baking, and the result is, that from pure unadulterated Norfolk *seconds* I get from 370lbs. to 380lbs. of bread from 280lbs. of flour—good, well-baked, and wholesome bread, in which nothing whatever is to be found but pure water and yeast, with a little sprinkling of salt. How much more bread would be produced from a superior quality made from fine qualtities of corn, such as that grown on the strong lands of Essex, and other places in the London district, I cannot say; but I have said enough to show that ninety four-pound loaves may be produced from a sack of flour without fraud. I very much fear, that Mr. Reveley's sack of flour, producing only 320 lbs., has been from heated or unsound corn, or that his domestics are behind the rest of the world in the art of bread-making. That alum is used by some bakers is, I believe, an undoubted fact, and more particularly for the purpose of giving to bread made from inferior and damaged flour the appearance of the bread made from the best. It is said, too, that it helps to increase the quantity of bread made, but this, I believe, is doubtful. The quantity, however, is after all very small,—it is said not more than one ounce to the sack,—and I leave it to the doctor to say whether this can have any deleterious effect or not. But whether this be so or not the practice is not to be defended, if the object be to make that apparently of first-rate quality, which in reality is not so. I do not believe, on examination, it would be found in general use among the best bakers, and it would certainly not be required when the best flour was used. When flour is damaged it is generally the gluten which is partially destroyed, and it is difficult to make the bread "rise," as it is termed, without the addition of something. All these, however, are matters which an investigation, carefully conducted, would set right, and the public would then know what they had to guard against. As to anything like a general system of adulteration taking place at the mills, I am satisfied, looking at the character of the parties at the head of such establishments, and the mode in which they are conducted, that, if adulteration be made there, such cases are the exception, not the rule. Even if there were no higher motive than that of self-interest, the latter alone would be quite sufficient, except with a few short-sighted rogues (which there will always be in all trades), to prevent the practice. The story about millers using alum to stop the holes in their millstones, and that thus a quantity is regularly ground with the corn, has been well disposed of by your correspondent H. It is simply an idle tale. That the English millers construct their millstones in the manner described by Mr. Reveley, namely, building them up of brickbats and plaster of Paris, faced with small bits of French burrs, is a pure delusion. If any millwright palmed off such a stone upon the miller, the latter would be sadly wanting in sharpness not to detect the "adulteration." The French burr is found to present a surface which, from its texture, is peculiarly adapted for grinding wheat. It is imported here in blocks or lumps, of various sizes, and the miller who understands his business will, if he cannot rely on the judgment of his millwright, carefully pick out the various burrs with which he will have his stone built. These are then carefully fitted and cemented together with plaster of Paris, bound round with iron hoops, forming a compact heavy mass, presenting a face the open texture of which is admirably adapted for the purpose, intended. How much depends on the quality and texture of the burrs any miller will tell you. I fear the close hard surface of the stones Mr. Reveley refers to would be found not to answer the purpose. He will, however, be doing great service to the trade if he will point out by what means the millers of Italy make a four-foot stone manage to grind well twelve, eighteen, and twenty-four bushels of wheat per hour, with the same or a small increase only in power. I cannot help thinking there must be some error in this, as our millers here are very ready to adopt any improvements in their machinery which they can see are practically valuable. They are fully alive to all that is going on, and the machinery and contrivances in our principal corn mills of the present day, need fear no comparison with any employed in other branches of manufacture.* It is no more a censure, that machinery adapted for the grinding of wheat is incapable of grinding Indian corn, as Mr. Reveley would imply, than that it is incapable of grinding bark for the tanner, drugs for the druggist, or coprolites for manure. I am not prepared to say it is incapable of improvement —that would be absurd. The competition, however, in the trade is so great, that improvements are constantly sought and made, and if Mr. Reveley can show how these Italian methods can be made available for our English millers, he will not only benefit them, but, what is more, confer a vast advantage on the public at large.

I fear, however, I have digressed somewhat too much from my original text—adulteration. To sell an adulterated article, or one of inferior materials from that which it professes to be, appears to me to stand in the same category as that of short weights and measures. We have a machinery by which these are tested. Why cannot a machinery be devised by which the article sold can also be tested. It is plain that the consumer has neither the time nor the knowledge and ability, in the larger number of cases, to make the test for himself. He cannot test the alum in his bread, the chicory in his coffee, the sulphuric acid in his vinegar, &c. I can see no valid reason why visitors of competent abilities should not be duly organized to step into any man's shop, test the articles exposed for sale, report and punish, in like manner as is now done with respect to false weights and measures, all persons selling adulterated goods. Such a system has long been in existence in France, and, I am told, works well and without inconvenience. I shall be told, no doubt, that such a system will do very well in France, and that the genius of the people there is suited for such a system, but that it is wholly contrary to the spirit of the English, and that liberty of which we are ever making so much boast. I am, however, very much inclined to think that that liberty of the subject of which we are ever talking is a sad impediment to the progress of many a social improvement. I believe it to be the duty of society to do that for the individuals composing it, which they cannot undertake themselves. In order to do this, we must, no doubt, surrender to some extent, our individual liberty of action. The extent to which we surrender it should be proportionate to the benefit received in return. So long as this is the case no harm can result. The question to be considered in every instance is, can society by any arrangements carry out effectually the object it seeks, and is not the individual powerless without its aid, and on which side does the balance of benefit or inconvenience preponderate.

I am inclined to believe that careful investigation of this question of adulteration will show evils of a more serious kind than are generally known, and with which the individual is incapable of dealing, but which society can with advantage undertake to counteract.

In concluding, I beg to say, as an apology for my long letter, that although I am neither a farmer, a miller, nor a baker, yet I have had some opportunities of becoming acquainted with their respective trades.

I am, sir, your obedient servant.

NEMO.

Proceedings of Institutions.

◆

Stockton-on-Tees.—A lecture was delivered in the Assembly-room, Town-hall, in connection with the Mechanics' Institution, on Monday evening, by Mr. S. Phillips, lecturer to the Yorkshire Union of Mechanics' Institutes. "On the Poetry of the Pope Era, from Pope to Burns and Cowper." The lecture comprised a brief sketch of the poets who flourished from the time of Queen Anne to those of George the Third, including Pope, Gay, Thompson, Gray, Collison, Cowper, Burns, &c. Mr. Phillips appears to be thoroughly conversant with the excellencies and defects of that particular epoch, and, moreover, to possess a very independent mind. The attendance was very small, and there was an entire absence of the officials of the society.

Wellingborough.—Mr. H. Vincent delivered two lectures on "The Turkish War, and the duties imposed by this age upon the people of Great Britain," in the Town Hall, to the members of the Society and others. Mr. Vincent is not the mob orator he once was, or was supposed to be, but gave his lectures with a moderation of tone pleasing to all political parties in the town. As an orator, he almost stands unequalled amongst perambulating lecturers, and Societies engaging him, upon his own terms, would not be disappointed.

Wrexham.—A lecture was delivered on the 15th instant, by T. Edgworth, Esq. the treasurer of the Literary and Scientific Institution, "On the Education of the Eye." The lecturer strongly urged the value and importance of acquiring a knowledge of the art of drawing. He adverted to a lecture he had delivered to the Institution twelve or fourteen years ago, on the same subject, and contrasted the means now afforded to young persons to improve and instruct themselves with those existing at the period of his former lecture.

MEETINGS FOR THE ENSUING WEEK.

Mon.	Entomological, 8.
Tues.	Pathological, 8.
Wed.	Geological, 8. 1. Mr J. W. Dawson, "On a Submerged Forest at Fort Lawrence, Nova Scotia." 2. Professor Owen, "On some new Small Reptilian Remains from Purbeck." 3. Professor Owen, "On a large Fossil Cuttlefish from the Kimmeridge Clay" 4. Mr. W. J. Hamilton, "On the Tertiaries of Cassel and its Vicinity." Pharmaceutical, 8½.
Thurs.	Zoological, 3. Photographic, 8.
Fri.	Botanical, 8.
Sat.	Medical, 8.

---

* As an example of this, I would point to the very long and important trial which took place last week, Bovill *v.* Rands, in which the claim to an invention of certain improvements in grinding corn, by means of forcing a current of air between the stones, was contested. In this action the merits of six different patents for the purpose were discussed.

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS,

Delivered on 21*st Dec.*, 1854.

Turnpike Trusts (England and Wales)—General Report.

Session 1854.

Par. No.
425. Church Rates (London)—Return.
453. Shipwrecks by Lightning—Papers.

Delivered on 22*nd December*, 1854.

7. Tenement Valuation (Ireland)—Return.
3. Bills—Judgments Execution, &c.
7. Bills—Episcopal and Capitular Estates.
8. Bills—Spirits (Ireland).
Railways (Number of Passengers)—Return.
471. Income Tax (Ireland)—Return.

Delivered on 23*rd December*, 1854.

9. Bills—Public Libraries and Museums.
10. Bills—Common Law Procedure Act Amendment (Ireland).

PATENT LAW AMENDMENT ACT, 1852.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, Dec.* 22*nd*, 1854.]

Dated 9*th November*, 1854.

2377. J. Porro, 4, South-street, Finsbury—Reflection of light.

Dated 21*st November*, 1854.

2455. N. Callan, Maynooth-college—Galvanic batteries.

Dated 23*rd November*, 1854.

2473. C. Crickmay, Lozells, Handsworth—Repeating fire-arms.

Dated 25*th November*, 1854.

2491. R. Roberts, Manchester—Preparing cotton to be spun.

Dated 4*th December*, 1854.

2547. W. Thomson, W. J. M. Rankine, and J. Thomson, Glasgow—Electrical conductors.
2549. F. W. Russell, 19, Westbourne-street, Hyde-park-gardens—Looms.
2551. J. Porritt, Stubbin-vale-mill, near Ramsbottom—Carding machines.

Dated 5*th December*, 1854.

2553. T. Cooper, Isle of Wight—Pipes.
2555. C. F. Varley, 1, Charles-street, Somers-town—Dynamic electricity.
2557. G. F. Wilson, and J. C. Craddock, Belmont, Vauxhall—Candles and night lights.

Dated 6*th December*, 1854.

2559. J. Warhurst, Hollingworth—Furnaces.
2561. P. A. le Comte de Fontaine Moreau, 4, South-street, Finsbury—Coating and colouring metals and alloys of metals. (A communication.)
2563. J. W. Mackie, Edinburgh—Food.
2565. J. Anderson, Dumbarton—Angle and bar iron for ship-building.

Dated 7*th December*, 1854.

2567. C. Hodgson and J. W. Stead, Salford—Washing machinery.
2569. G. H. Eden, Birmingham—Sharpening razors.
2571. J. E. Mc Connell, Wolverton—Steam-engines.
2573. J. C. Browne, Weston-super-Mare—Wrapper.
2575. N. B. Carney, New York—Circular power loom.
2577. T. Metcalfe, High-street, Camden-town—Bath chair.

Dated 8*th December*, 1854.

2578. E. P. Castelot, Lierre—Decolorizing juices of beetroot, sugar-cane, and raw sugar.
2579. G. Aubury, Queen-street, Edgeware-road, and W. R. Bridges, Gravel-lane—Portable gas apparatus.
2580. F. Jolly, Turton—Mangling machinery for piece goods.
2581. J. E. Mc Connell, Wolverton—Ordnance.
2582. W. Hawthorn, Newcastle-upon-Tyne—Safety valves.
2583. T. Brown, and P. Mac Gregor, Manchester—Machinery for piled fabrics.
2584. E. Acres, Pouldren-mills, Waterford—Drying grain.

Dated 9*th December*, 1854.

2585. J. Thom, Birk-acre, near Chorley—Singeing fabrics.
2586. T. C. Hinde, Birmingham—Ordnance.
2587. J. Cortland, 70, Wellesley-street, Stepney-east—Safety of life at sea or in rivers.
2588. J. Higgins and T. S. Whitworth, Salford—Bayonets.
2589. G. Hale, Tavistock-street, Covent-garden—Motive power.
2590. G. A. Buchholz, Hammersmith—Threshing machinery.
2591. Lieut. R. J. Morrison, R.N., Old Brompton—Propelling ships.
2592. R. Button, Hackney—Locks and keys.
2593. E. Maniere, Bedford-row—Lamps. (A communication.)
2594. N. Johnston, Bordeaux—Buildings for leeches. (A communication.)
2595. J. A. Nicholson, 10, Chapel place, Bermondsey—Table forks.
2596. G. Taylor, Liverpool—Steam-engine governors. (A communication.)
2597. W. Davis, Old Kent-road—Furnaces.
2598. J. I. King and T. Brindley, 2, Leonard-square, Finsbury—Cigar and card cases.

Dated 11*th December*, 1854.

2599. F. Jacquot, Bruxelles—Lining of hats, &c.
2600. W. James, Crosby-hall-chambers—Spikes, bolts, &c.
2601. C. T. Guthrie, New Bond street—T and set squares, &c.
2602. W. J. Harvey, Exeter—Revolving fire-arms.
2603. N. E. Stevens, Tunbridge-wells—Joining blocks of stone.
2604. W. G. Craig, Gorton—Railway axle boxes.
2605. J. Dodds, Sheffield—Slide valves.
2606. E. T. Bellhouse and R. Thomas, Manchester—Cranes.
2607. W. Bemrose, jun., and H. H. Bemrose, Derby—Perforating paper.
2608. F. Puls, Whitechapel-road—Electro-galvanic apparatus.
2609. A. V. Newton, 66, Chancery-lane—Conducting wire for electric telegraphs. (A communication.)
2610. C. H. R. Ebert, and L. J. Levisohn, Old-street, St. Luke's—Rendering cases extensible,

Dated 12*th December*, 1854.

2612. G. H. Bachhoffner, Upper Montague-street—Fire-places for consumption of smoke.
2613. T. White, Landport—Portable houses.
2614. W. Chippindale, and L. R. Sedgwick, Bedale—Steam boilers.

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

2617. J. Nesmith, Lowell, Massachusetts—Manufacture of wire netting and wire fence by power. 13th Dec., 1854.
2634. W. C. Day, Strand—Portable camp bedstead and bedding. 14th Dec., 1854.

WEEKLY LIST OF PATENTS SEALED.

Sealed 22*nd December*, 1854.

1419. Peter Armand le Comte de Fontaine Moreau, 4, South-street Finsbury—Improvements in apparatus for producing aerated waters.
1421. James Brunlees, Manchester—Improvements in draw-bridges, applicable to rail and other roadways.
1422. Henry Sutherland Edwards, Cranbourne-street—Improvements in preparing textile fabrics or materials for the purpose of their better retaining colours applied to them.
1429. Thomas Markland, Hyde—Improvements in machinery or apparatus for warping, dressing, and weaving textile materials.
1435. Louisa Monzani, Greyhound-place, Old Kent-road—Improvements in the manufacture of folding chairs, stools, and other articles to sit or recline upon.
1442. Joseph Hulme, Manchester—Improvements in steam-engines and in valves, parts of which improvements are applicable for diminishing friction in other engines.
1443. Thomas Richards Harding, Leeds—Improvements in the manufacture of the pins of hackles, combs, and cylinders used in hackling, combing, and preparing wool, flax, and other fibrous substances, and in the mode of applying them to manufacturing purposes.
1466. George Daniel Bishopp, Inverness-terrace—Improvements in the construction and arrangement of engines to be driven by steam, air, gases, or water.
1475. Thomas Restell, Strand—Apparatus or holder for holding parcels of gloves, and other goods and papers.
1493. William Lacey, The Lozells-lane, Birmingham—Improved method of making copper rollers, cylinders, and tubes.
1525. Luke Cooke, Sowerby-bridge—Improvements in machinery or apparatus for preparing cotton, wool, or other fibrous substances to be spun.
1571. John Livesey, New Lenton—Improvements in lace machinery, and in fabrics manufactured by such machinery.
1603. John Thomas Moss, Arundel-street, Strand—Improvements applicable to apparatus for roasting meat and other edible substances.
1709. Louis Player Miles, Ravensbourne-park, Lewisham—Improvements in the construction of locks.
1748. John Livesey, New Lenton—Improvements in the manufacture of fringes.
2064. William Palmer Surgey, Hackney—Improvements in cigars, cigarettes, and cheroots.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Date of Registration.	No. in the Register.	Title.	Proprietors' Names.	Address
Dec. 23.	3672	Steerage Horse Hoe	John Revell	Wellington Foundry, Newark.